

$$1) x + 2(x+1) = 4$$

$$x + 2x + 2 = 4$$

$$x + 2x = 4 - 2$$

$$3x = 2$$

$$\boxed{x = \frac{2}{3}}$$

$$2) 4(x-3) - 4(x+2) = 7(3x-1) + 29$$

$$4x - 12 - 4x - 8 = 21x - 7 + 29$$

$$\cancel{4x} - \cancel{4x} - 21x = -7 + 29 + 12 + 8$$

$$-21x = 42$$

$$x = \frac{42}{-21} ; x = \frac{-42}{21} ; \boxed{x = -2}$$

$$3) 6x + 2(1+x) = 3x - 8 + x - 2$$

$$6x + 2 + 2x = 3x - 8 + x - 2$$

$$6x + 2x - 3x - x = -8 - 2 - 2$$

$$4x = -12$$

$$x = \frac{-12}{4}$$

$$\boxed{x = -3}$$

$$4) 3(x+1) = 2(x+3) - 1$$

$$3x + 3 = 2x + 6 - 1$$

$$3x - 2x = 6 - 1 - 3$$

$$\boxed{x = 2}$$

$$5) 3(4+12x) - 6(2x+3) = 36 + 2(3x+2)$$

$$12 + 36x - 12x - 18 = 36 + 6x + 4$$

$$36x - 12x - 6x = 36 + 4 - 12 + 18$$

$$18x = 36$$

$$x = \frac{36}{18}$$

$$\boxed{x = 2}$$

$$6) 2 + 3(2x+1) - 8 - 3(x+4) = 6$$

$$2 + 6x + 3 - 8 - 3x - 12 = 6$$

$$6x - 3x = 6 - 2 - 3 + 8 + 12$$

$$3x = 9$$

$$x = \frac{9}{3}$$

$$\boxed{x = 3}$$

$$7) 6x - 5(4-2x) = (4-x) + 2$$

$$6x - 20 + 10x = 4 - x + 2$$

$$6x + 10x + x = 4 + 2 + 20$$

$$17x = 26$$

$$\boxed{x = \frac{26}{17}}$$

$$8) \quad 3x + 4(-x - 6) = 5x - 6(-x + 1)$$

$$3x - 4x - 24 = 5x + 6x - 6$$

$$3x - 4x - 5x - 6x = -6 + 24$$

$$-12x = 18$$

$$x = \frac{18}{-12}$$

$$x = \frac{-18}{12}$$

$$\boxed{x = \frac{-3}{2}}$$

$$9) \quad 3(x + 5) - x = (2x + 3)4 + x$$

$$3x + 15 - x = 8x + 12 + x$$

$$3x + \cancel{x} - \cancel{x} - 8x = 12 - 15$$

$$-5x = -3$$

$$x = \frac{-3}{-5}$$

$$\boxed{x = \frac{3}{5}}$$